

Appendix

Declarations of

Dr. Timothy Laher

and

Dr. Michael Ferralli

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In re Application of**

**Kevin A. Seiling**

**Filed: March 15, 2004**

**Art Unit: 1771**

**Patent Examiner: Vo, Hai**

**Our Ref No.: 01-180 CIP**

**Composite Decking**

---

Assistant Commissioner for Patents  
Washington, DC 20231

March 26, 2007

**DECLARATION OF MICHAEL W. FERRALLI**

Now comes Michael W. Ferralli, an individual, who resides at 7275 Springside Drive, Fairview , Pennsylvania, and who declares the the following facts are true, complete and correct:

1. I hold an undergraduate degree in Physics from Gannon University and a graduate degree in Physics from the University of Dayton. I am board certified in Noise control by INCE, the Institute of Noise Control Engineers, one of less than 250 individuals to receive that highest level of certification. I has received over 20 patents in various areas of physics, most notably in surface physics, polymer physics, thermodynamics and acoustics. I have been and continue to be consultant in noise control, surface physics, polymer physics and thermodynamics for over 40 companies including a number of very large corporations. I have nearly 30 years experience in these areas including over 25 years in consulting I have over 30 publications in these areas. Additionally I have served in the courts as an expert witness in acoustics and physics for many companies.

2. I am a professor of physics at Gannon University, and am the physics department chairman and director of industrial research at that institution. I have served and am currently on the board of directors of a number of companies and institutions. I am a member of the American Physical Society and American Chemical Society and a past member and officer of the Erie Engineering Society Council (EESC). I have received numerous awards from various organizations including 2 outstanding member awards

from the EESC. I have served on the Grant review board of both the National Institute of Health and the Commonwealth of Pennsylvania, Ben Franklin Partnership Grant Program. I have received over 30 grants from various organizations.

3. I have been involved in the research of the physical properties of polymers and have evaluated and investigated over 100 such materials during my 38 year career, including being employed as a researcher in acoustics and physics of polymers by a large corporation for 13 years. Through this experience and background I am knowledgeable in the physical properties of polymers especially as those properties designate polymer differences.

4. I have investigated the physical differences between the polymers known as Polyvinyl Chloride (PVC) and Chlorinated Polyvinyl Chloride (CPVC) and have found the following differences in physical properties.

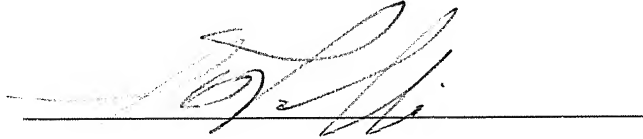
- a. The density of PCV is typically  $1.4 \text{ gm/cm}^3$ : The density of CPVC is typically  $1.52 \text{ gm//cm}^3$ , a difference of greater than 8%.
- b. The surface hardness of CPVC is RR120 vs RR110 for PVC , difference of 9%.
- c. The flexural strength of CPVC is 58 MPa vs 51 MPa for PVC, a difference of greater than 13%.
- d. The linear expansion coefficient of CPVC is  $7 \times 10^{-5} \text{ C}^{-1}$  vs  $6 \times 10^{-5} \text{ C}^{-1}$  for PVC, a difference of greater than 16%.
- e. The Strain at yield for CPVC is 5% vs 3.5% for PVC, a difference of greater that 42%.
- f. The Maximum Operational Temperature of CPVC is 90 degrees C vs 50 degrees for PVC, a difference of 80%.
- g. The melting Temperature Range of CPVC is 220-240 degrees C vs 150-220degrees for PVC, a difference of approximately 24%.

5. The differences in these properties clearly demonstrate that the two polymers are quite distinct and must be considered as different polymers. These differences infer a substantially different structure of the polymers. Based upon my experience, education and expertise, I conclude that, based upon there physical properties as given above, CPVC and PVC are different polymers. I further conclude that the physical properties of PVC cannot be ascertained, predicted, or demonstrated from the physical properties of CPVC to an extent reasonably beyond such prediction from the properties of other related polymers.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements

and the like so made are punishable by fine and imprisonment, or both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued there from.

Further I say not.

A handwritten signature in black ink, appearing to be "J. L. H.", is written over a horizontal line.